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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,586	09/23/2003	John S. Hsu	920976.00005	2411

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EXAMINER

TAMAI, KARL I

ART UNIT PAPER NUMBER

2834

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/668,586	Applicant(s) HSU, JOHN S.	
	Examiner Tamai IE Karl	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. This application filed under former 37 CFR 1.60 lacks the necessary reference to the prior application. A statement reading "This is a *** of Application No. ***, filed ***." should be entered following the title of the invention or as the first sentence of the specification. Also, the current status of all nonprovisional parent and related applications referenced should be included.

Specification

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification, such as the cross reference to related Applications should be the first line/section of the specification not the second line.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

4. The abstract of the disclosure is objected to because it contains legal language, such as: "said pole portions" (line 9). Correction is required. See MPEP § 608.01(b).

Drawings

5. Figures 1a, 1b, and 1c should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. The applicant describes figures 1a-1c as states of operation for a motor, but not necessarily for the present invention and the drawings are identical to the figures 5a-5c in prior art United States Patent 6,573,634. See MPEP § 608.02(g).

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the harmonic reduction slits (32s) must be shown or the feature canceled from the claims. No new matter should be entered.

7. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the brushless electric machine operated as a generator must be shown or the features canceled from the claims 12 and 18. No new matter should be entered.

8. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

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and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

9. Claims 1-18 are objected to because of the following informalities: The claims are vague and indefinite because they claim a second flux component without defining a first flux component. It is unclear what constitutes the first flux component. The examiner will assume the first flux is the flux induced in the rotor by the stator windings as defined by the specification (paragraph 14). The meaning of the acronym (permanent magnet) should be included in claims 1 and 13 prior to the first occurrence of the acronym. Claim 7 does not provide antecedent basis for the limitation "the axial air gap" Appropriate correction is required.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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11. Claims 12 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claims 12 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not provide any structure for the device to be used as a generator, nor does the specification disclose how the structure will be operated as a generator. The three disclosed windings structures (35a, 36a, and 31b) provide flux to the machine, but no structure is disclosed for converting flux to an electric current.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 2, 5, 9, 11-15, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosenberg (US 3411027). Rosenberg teaches a machine (motor or generator) with a radial air gap stator and rotor, where the rotor has pole pairs 49, 51 of

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opposite polarity and axial extension 50, 52 extending towards secondary air gaps which include axial and radial air gaps. Rosenberg teaches DC secondary excitation coils 58, 59, where the flux in the air gap is increased or decreased based upon the direction of the current through the coil. It is inherent the permanent magnets on the rotor convey the excitation flux to the air gap and inhibit flux leakage from the pole portions. Figure 5 shows the rotor being cylindrical with magnets 27 in grooves with pole pieces 26 to form poles of alternating polarity separated by PM material, and an axial projection 24 extending towards the axial/radial airgaps between 39/40. The apparatus is inherently an AC synchronous generator when the shaft is driven rotated by an external power source.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Rosenberg (US 3411027), in further view of Gay et al. (Gay)(US 2002/0117907).

Rosenberg teaches the excitation core is magnetic material. Rosenberg teaches every aspect of the invention except the material of the excitation core being iron, steel, iron alloy, or compressed ferromagnetic power. Gay teaches compressed iron particles core because they have reduced eddy current losses. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the machine of

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Rosenberg with the magnetic material of the cores being compressed iron particles to reduce eddy current losses.

16. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg (US 3411027), in further view of Noda et al. (Noda)(JP 2000-278899). Rosenberg teaches every aspect of the invention except shallow surface slits on the circumference and along the axial direction to reduce harmonic slot losses. Noda teaches shallow slits on the surface of the rotor to reduce harmonics losses. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the machine of Rosenberg with the shallow surface slits to reduce noise as taught by Noda.

17. Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg (US 3411027), in further view of Roa et al. (Roa)(US 6097124). Rosenberg teaches every aspect of the invention except the machine being a brushless DC machine. Roa teaches a brushless, permanent magnet machine with a field adjusting coil 112 can be operated as an DC or AC, motor or generator. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the machine of Rosenberg with the machine operating as a DC machine because Roa teaches that the PM machines can be operated with or produce either AC or DC current, and because the machine can be operated from a battery or an AC outlet.

Allowable Subject Matter

18. Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Double Patenting

19. Claims of this application conflict with claims of Application No. 10/848450 and Application 11/019075. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.


20. Claims 1-5 and 9-18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-5, 11, 15-24 of U.S. Patent No. 10/848450. Although the conflicting claims are not identical, they are not patentably distinct from each other because the axial projection extensions on the rotor and the radial air gaps between the rotor and stator set forth in 10/668589 are obvious modifications to the device in order to direct the flux between the stator coils and the rotor.

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21. Claims 1, 2, 5, and 9-18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 6, and 11-20 of U.S. Patent No. 11/019075. Although the conflicting claims are not identical, they are not patentably distinct from each other because the axial projection extensions on the rotor and the cylindrical stator with AC flux, or the PM material forming boundaries between the pole pairs 10/668589 are obvious modifications to the device in order to direct the flux between the stator coils and the rotor.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272 - 2036. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (703) 872 - 9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

Karl I Tamai
PRIMARY PATENT EXAMINER
April 18, 2005


KARL TAMAI
PRIMARY EXAMINER

US: 3411027, 6097124, 20020117907, JP: 2000-278899